

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended): A fluid measurement system₁ comprising:

an imaging means for taking images of particles contained in a fluid to be measured at small time intervals, said imaging means comprising a long focus optical system being of a long distance type that images a fluid to be measured a long distance away, and said long focus optical system being provided with a shield which shields a part including a central portion of a main mirror at an arbitrary shield rate, wherein said shield rate is set in a range of 20% to 60% when one particle image obtained by the imaging means is across two pixels or more, and is set in a range of 0% to 40% when a plurality of particle images are contained in one pixel;

a control means for controlling said imaging means[[,]]; and

an image processing means for comparing luminance pattern distributions at a plurality of consecutive time points obtained by said imaging means to measure a moving direction and a moving amount of a particle group, and analyzing a flow field of the fluid to be measured[[,]]

~~said imaging means comprising a long focus optical system being of a long distance type capable of imaging a fluid to be measured a long distance away, and~~

~~said long focus optical system being provided with a shield which shields a part including a central portion of a main mirror at an arbitrary shield rate.~~

2. (Original): The fluid measurement system according to claim 1, wherein

the shield rate found by a ratio of a diameter of said shield to an aperture of said long focus optical system is provided to be arbitrarily adjustable.

3. (Canceled).

4. (Currently Amended): The fluid measurement system according to ~~any one of claims 1 to 3~~ claim 1, wherein

a secondary mirror included in said long focus optical system is supported by parallel plate glasses whose surfaces are disposed to be oriented in a direction perpendicular to an optical axis of a main mirror in ~~[[the]]~~ a lens barrel.

5. (Currently Amended): The fluid measurement system according to ~~any one of claims 1 to 4~~, claim 1, wherein

said imaging means is of a long distance type ~~capable of imaging that images~~ a luminance pattern distribution by natural light reflection in the fluid to be measured a long distance away.

6. (Currently Amended): The fluid measurement system according to ~~any one of claim 1 to claim 4~~, claim 1, further comprising:

a laser light input means for inputting a laser light in a sheet form into the fluid to be measured,

wherein said imaging means is of a long distance type ~~capable of imaging that images~~ a luminance pattern distribution by ~~[[the]]~~ laser light reflection in the fluid to be measured a long distance away.

7. (Currently Amended): The fluid measurement system according to ~~any one of claim 1 to claim 6~~ claim 1, wherein

said imaging means is of a long distance type ~~capable of imaging~~ that images the fluid to be measured 10 m or greater and 20 km or less away from ~~[[the]]~~ a set position of said imaging means.

8. (Canceled).

9. (Currently Amended): ~~[[The]]~~ A long focus optical system, ~~according to claim 8~~
comprising:

a lens barrel;

a main mirror and a secondary mirror supported in the lens barrel; and

a shield that shields a part including a central portion of the main mirror at a predetermined shield rate, wherein

the shield rate found by a diameter of said shield with respect to an aperture is settable in a range from 20% to 60% when one particle image obtained by an imaging means is across two pixels or more, and is settable in a range from 0% to 40% when a plurality of particle images are contained in one pixel.

10. (Currently Amended): The long focus optical system according to ~~claim 8 or claim 9~~, wherein

said secondary mirror is supported by parallel plate glasses whose surfaces are disposed to be oriented in a direction perpendicular to ~~[[the]]~~ an optical axis of a main mirror in the lens barrel.

11. (Currently Amended): The long focus optical system according to ~~any one of claim 7 to claim 10~~ claim 9, wherein said long focus optical system ~~being used~~ is included in an

imaging means in a fluid measurement system comprising an imaging means for taking images of particles contained in a fluid to be measured a long distance away at small time intervals, a control means for controlling said imaging means, and an image processing means for comparing luminance pattern distributions at a plurality of consecutive time points obtained by said imaging means to measure a moving direction and a moving amount of a particle group, and analyzing a flow field of the fluid to be measured.

12. (New): A fluid measurement system, comprising:

a camera configured to take images of particles contained in a fluid to be measured at small time intervals, said camera comprising a long focus optical system being of a long distance type that images a fluid to be measured a long distance away, and said long focus optical system being provided with a shield that shields a part including a central portion of a main mirror at an arbitrary shield rate, wherein said shield rate is set in a range of 20% to 60% when one particle image obtained by the camera is across two pixels or more, and is set in a range of 0% to 40% when a plurality of particle images are contained in one pixel; and

a computer configured to control said camera, said computer including an image processor configured to compare luminance pattern distributions at a plurality of consecutive time points obtained by said camera to measure a moving direction and a moving amount of a particle group, and analyze a flow field of the fluid to be measured.